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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/596,796	06/19/2000	Scott P. Tennican	50002.4USU1	3724

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DARBY & DARBY P.C.
P.O. BOX 5257
NEW YORK, NY 10150-5257

EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT	PAPER NUMBER
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2161

DATE MAILED: 12/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/596,796	Applicant(s) TENNICAN ET AL.	
	Examiner Etienne P LeRoux	Art Unit 2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/20/2005 has been entered.

Claims Status

Claims 28-34 are pending, claims 1-27 are cancelled. Claims 28-34 are rejected as detailed below.

Provisional Application

Under 35 U.S.C. 119(e), the written description and drawing(s) (if any) of the provisional application must adequately support and enable the subject matter claimed in the nonprovisional application that claims the benefit of the provisional application. In *New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co.*, 298 F.3d 1290, 1294, 63 USPQ2d 1843, 1846 (Fed. Cir. 2002), the court held that for a nonprovisional application to be afforded the priority date of the provisional application, "the specification of the provisional must contain a written description of the invention and the manner and process of making and using it, in such full, clear, concise, and exact terms, to enable an ordinarily skilled artisan to practice the invention as supported in the nonprovisional application." In instant provisional application, the following omissions are noted:

- (1) The provisional application comprises copies of a slide presentation, no specification is provided.
- (2) The following claim 28 limitation is not supported "for each stored datum, assigning each of a plurality of data structure types to the same stored NAT connection datum."

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(3) The following claim 28 limitation is not supported “automatically determining one of the plurality of data structure types best suited to the NAT connection datum.”

(4) The following claim 33 limitation is not supported “wherein the first data structure type is a trie data structure and the second data structure type is a list structure.”

Due to lack of support in the provisional application for the above-noted claim limitations, instant nonprovisional application will not be afforded the priority date of the provisional application. For purposes of prior art rejection(s) the filing date of the non-provisional application will be used.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 28-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 28 recites “for each stored NAT connection datum, assigning each of a plurality of data structure types to the same stored NAT connection datum.” Figure 3 shows Functional Interface 102 determining which data structure is required to retrieve objects from the store and then retrieving the object per the determined data structure type. There is nothing in Figure 3 or in the specification which even vaguely suggests that a plurality of data structure types are assigned to each and every NAT connection datum in the data store. However, for sake of argument, let us assume that each and every stored NAT connection datum is assigned a plurality of data structures. If the above is true, then the specification does not support the limitation “automatically determining one of a plurality of data structure types best suited to the NAT connection datum.” No indication

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is given in the specification of the process by which a determination is made of “the data structure type best suited to the NAT connection datum.” Furthermore, no indication is given of how the “best suited” data structure is correlated to a request for NAT connection datum.

Furthermore, a data structure is defined¹ as “an organizational scheme, such as a record or array, that can be applied to data to facilitate interpreting the data or performing operations on it.” It is unclear how an array of binary digits can be characterized as a plurality of data structure types.

Claims 30 and 34 include limitations similar to the above and thus are rejected on the same basis.

Claims 29 and 31-33 are rejected for being dependent from a rejected base claim.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 30-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 30 recites:

a first object retrieval component that employs a first data structure type to retrieve each of the plurality of connection data objects from the data store

a second object retrieval component that employs a second data structure type to retrieve each of the plurality of connection data objects from the data store.

in response to the first request determines one of the first object retrieval component or the second object retrieval component to employ for retrieval of the connection data object

employs the first object retrieval component to retrieve the connection data object

¹ Microsoft Computer Dictionary Fifth Edition

The metes and bounds of the claim language cannot be determined because it is unclear why it is determined whether “one of the first object retrieval component or the second object retrieval component to employ for retrieval of the connection data object” when the very next limitation recites “employs the first object retrieval component to retrieve the connection data object.”

Claim 30 recites:

in response to the second request for the connection data object, and in response to the second request, determines the other one of the first object retrieval component or the second object retrieval component to employ for retrieval of the connection data object, and employs the other object retrieval component to retrieve the connection data object.” The metes and bounds of the claim language cannot be determined for the following reasons: (1) it is unclear what comprises “the other one of the first object retrieval component or the second object retrieval component,” (2) it is unclear why each of the plurality of connection data objects is retrieved a second time, (3) it is unclear whether the same connection data objects or different data objects are retrieved via the first object retrieval component and the second object retrieval component, (4) it is unclear exactly what comprises “the other object retrieval component.”

Claim 34 recites:

second data retrieval means for retrieving each of the plurality of connection data objects by employing as different data structure.” The metes and bounds of the claim language cannot be determined because it is unclear exactly what comprises “a different data structure.”

Claim 34 recites:

first data retrieval means for retrieving each of the plurality of connection data objects by employing a trie data structure

second data retrieval means for retrieving each of the plurality of connection data objects by employing a different data structure

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third data retrieval means for retrieving each of the plurality of connection data objects by selecting one of the first data retrieval means or the second data retrieval means. The metes and bounds of the claim language cannot be determined because it is unclear exactly what comprises the third data retrieval means.

Claims 31-33 are rejected for being dependent from a rejected base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 28-32 and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat No 6,324,177 issued to Howes et al (hereafter Howes), as best examiner is able to ascertain.

Claims 28, 30, 31 and 34:, :

Howes discloses:

storing a plurality of NAT connection data in a data store [Howes, local director 200, Fig 1, col 4, lines 27-45, connection object 340, Fig 3C]

for each stored NAT connection datum, assigning each of a plurality of data structure types [pointer 341, Fig 3C, linked list hash chain, col 8, line 13, pointer 354, Figs 3A-3C, col 8, line lines 29-30] to the same stored connection datum, wherein each of the plurality of data structures types are based on at least one of IP address or a port number [physical IP address 350, virtual IP address 304, port 306, Fig 3A, col 8, lines 15-20]

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receiving a request for a connection datum, wherein the request includes an IP address and port number [Fig 1]

automatically determining one of the plurality of data structure types best suited to the NAT connection datum [col 8, lines 29-36]

employing the determined data structure type to retrieve the requested NAT connection datum [col 8, lines 29-36]

Claim 29 and 32:

Howes discloses identifying a key in the request for the NAT connection datum, dividing the key into segments, employing each segment to search one of the plurality of data structure types to locate the requested NAT connection datum [Bind ID of 1, Bind ID of 2, col 5, lines 46-62]

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Howes in view of US Pat No 5,768,423 issued to Aref et al (hereafter Aref), as best examiner is able to ascertain.

Claim 33:

Howes discloses the essential elements of the claimed invention as noted above but does not disclose wherein the first data structure type is a trie data structure and the second data structure type is a list structure. Aref discloses wherein the first data structure type is a trie data structure and the second data structure type is a list structure [col 7, lines 57-64]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Howes to include wherein the first data

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structure type is a trie data structure and the second data structure type is a list structure as taught by Aref for the purpose of using a simple data structure where only a few objects may be encountered [col 7, lines 57-64].

Response to Arguments

Applicant's arguments submitted 9/20/2005 have been considered but are moot in view of supra new ground(s) of rejection which are made in response to applicant's claim amendments.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(1) US Pat No 5,507,030 issued to Sites discloses searching a data store for objects assigned at least one of list, hash or array data structures.

(2) US Pat No 6,522,632 issued to Waters et al discloses searching a data store for objects assigned at least one of trie, list and array

(3) US Pat No 6,212,184 issued to Venkatachary et al discloses searching a data store for objects assigned at least one of trie and hash.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne P LeRoux whose telephone number is (571) 272-4022. The examiner can normally be reached Monday through Friday between 8:00 am and 4:30 pm.

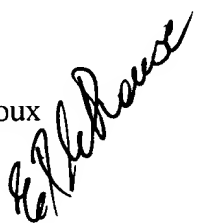
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on (571) 272-4023. The fax phone number for the organization where this application or proceeding is assigned is (571) 273- 8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Etienne LeRoux

12/2/2005

A handwritten signature in black ink, appearing to read 'Etienne LeRoux', is written over the printed name and date.